Scotsman

Installation and User's Manual for Cube Ice Machine

Model CU50

CU50
Installation and User's Manual

Introduction:

This ice machine is the result of Scotsman's decades of experience as an industry leader in the design and manufacture of both commercial and residential ice machines.

This manual includes the information needed to install, start up and maintain the ice machine. Note any Caution or Warning indicators, as they provide notice of potential hazards. Keep this manual for future reference.

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Outdoor Use Notice:

Keep from freezing. Severe damage will occur to the unit if left in or operated in temperatures beyond the limits listed in this manual. That damage is NOT covered by warranty.

Keep dry. Do not locate in low lying areas where puddles will accumulate.

Provide Shade: Heat gain from the sun will reduce the unit's ability to make and store ice, and ultraviolet radiation from the sun can potentially damage the unit's plastic components.

Water Supply: Avoid a long run of hose or tubing exposed to the sun. Plastic water supply tubing should be rated for potable water and include UV protection. Copper tubing is recommended.

Back Flow Prevention: The unit includes back flow prevention, no additional check valve is required.

Drainage: Do Not drain into swimming pool or onto grounds.

Operation: It is normal for the ice level in the storage bin to be low when unit is used in temperatures below 65 degrees F.

Specifications

This ice machine is designed to be used indoors, in a controlled environment, and under limited conditions (see page 1), outdoors. It can be used in a wide variety of environmental conditions, but there are limits. Use outside of the listed limitations is misuse and will void the warranty.

Air temperature limits:

The ice machine will operate adequately within the limits, but functions best in temperatures between 70 and 80 degrees F.

- Minimum – 50 degrees F. (10°C)
- Maximum – 100 degrees F. (38°C)

Water temperature limits:

- Minimum – 40 degrees F. (4.5°C)
- Maximum – 100 degrees F. (38°C)

Water pressure limits:

- Minimum – 20 psi (1.4 bar)
- Maximum – 80 psi (5.5 bar)

Because the ice machine is making a food product, the water supply to the ice machine must be potable, or fit for human consumption.

Other:

Indoor use and kickplate: You may remove the stainless steel kickplate cover from the unit when installed indoors. Leave the plastic kickplate on the unit.

Note:The stainless steel kickplate cover must remain on the unit when the unit is installed outdoors.

Electrical voltage limits:

- Minimum - 104 volts
- Maximum – 126 volts

Models

- CU50GA-1A - gravity drain
- CU50PA-1A - pump drain

Options:

Kickplate Extension**:** In some situations the leg levelers will be extended enough to become visible. A kit to extend the kickplate over the legs is **KKPF**.

Cabinet Stability: In some free standing installations it may be prudent to add a bracket that secures the back of the cabinet to a wall. That kit number is **KATB**.

Drain Conversion: A gravity drain model can be converted to a drain pump model by installing a drain pump kit. The drain pump kit consists of a drain pump, wiring harness and associated tubing. The part number is **A39462-021**.

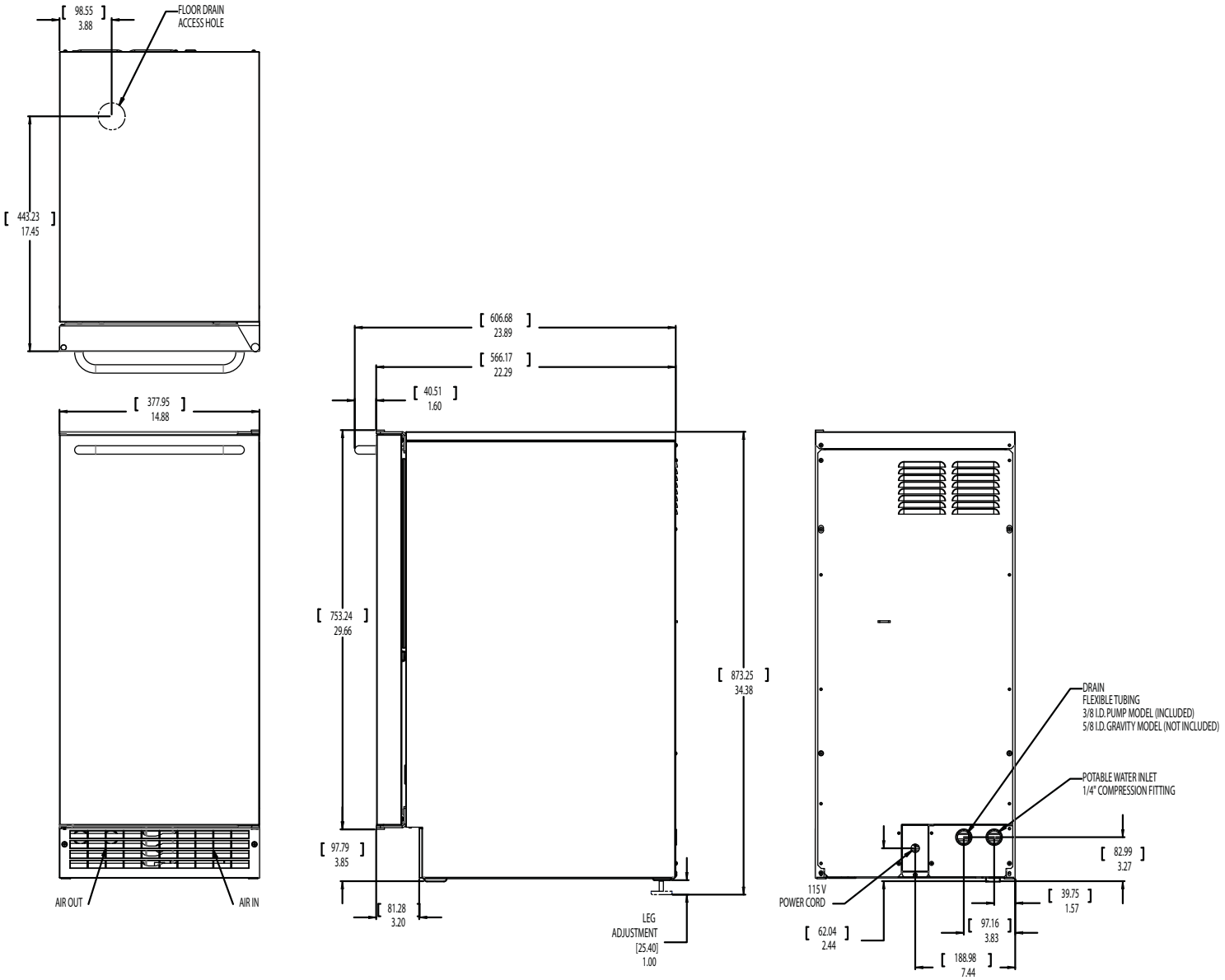
Warranty Information

Warranty information is supplied separately from this manual. Refer to it for coverage. In general, the warranty covers defects in materials or workmanship and does not cover corrections of installation errors or maintenance.

Cabinet Dimensions

Width	Depth, with door panel, handle adds 1 5/8"	Height
14 7/8"	22 3/4"	33 3/8" to 34 3/8"

Cabinet Layout



Air flow & Control Panel

The machine takes in room temperature air at the lower right front and forces warm air out the lower left front. Restricting the airflow will adversely affect the ability of the ice machine to make ice.

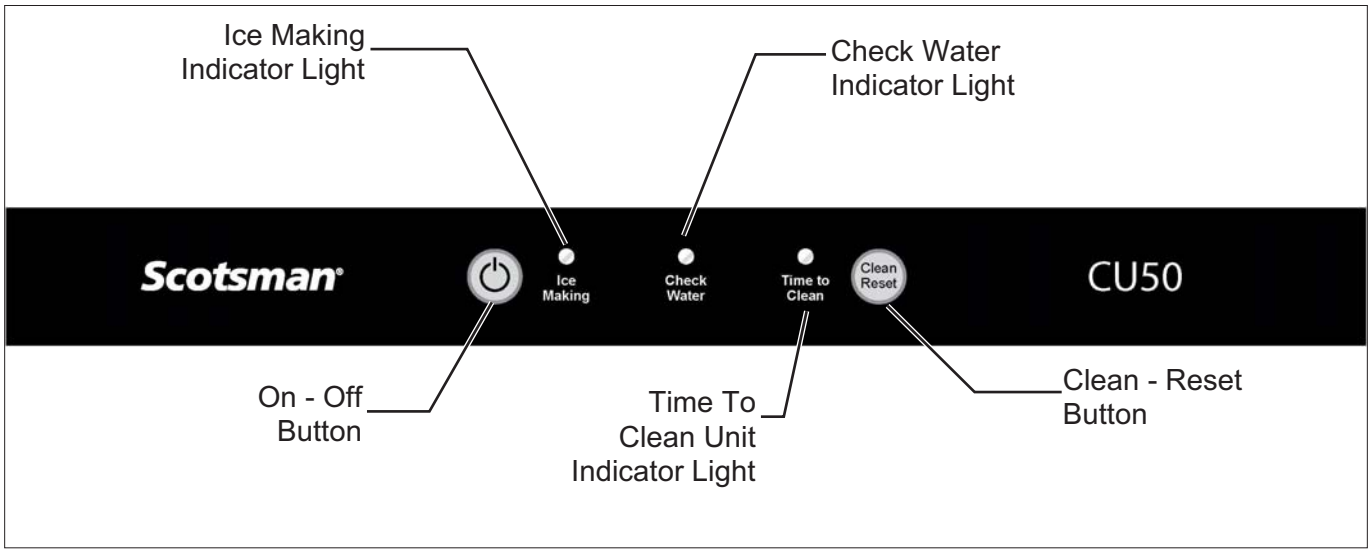
Scotsman Ice Systems are designed and manufactured with the highest regard for safety and performance. They meet or exceed the standards of agencies like U.L.

Scotsman assumes no liability or responsibility of any kind for products manufactured by Scotsman that have been altered in any way, including the use of any parts and/or other components not specifically approved by Scotsman.

Scotsman reserves the right to make design changes and/or improvements at any time.

Specifications and designs are subject to change without notice.

Location of Dataplate



Control Panel

Water Quality

All water, including potable water supplied by municipalities, contains some impurities or minerals. Water absorbs impurities from the air as rain and/or as it flows through the ground. Some of the impurities are solid particles, these are known as suspended solids, and a fine particle filter will remove them. Other impurities are chemically bonded to the water molecules, and cannot be filtered out, these are called dissolved solids.

Ice made by this machine will have a lower mineral content than the water it was made from. This is due to the method of making ice, as water with few or no mineral content will freeze first in the ice making molds. The reason for this is that the minerals dissolved in water lowers the water's freezing temperature so the purer water freezes first. This concentrates most of the impurities in the ice machine water reservoir where they may form hard deposits known as scale. The machine automatically dilutes the concentration of minerals by over-filling the reservoir during the harvest cycle (with the excess water flowing down the drain). Between 2 and 4 pints of water flow into the unit each cycle. Between 1 and 3.5 pints of that rinses the reservoir and goes down the drain.

Some impurities will inevitably remain, and will stick to the parts in the machine, and will cause malformed ice cubes. Eventually, **built up mineral scale can shorten machine life.**

To keep the machine operating properly, these impurities or minerals will have to be regularly dissolved by an acid cleaning, using Scotsman Ice Machine Scale Remover. Directions for this may be found in the section under cleaning.

Filters and Treatment

In general, it is always a good idea to filter the water. A water filter, if it is of the proper type, can remove taste and odors as well as particles. Some methods of water treatment for dissolved solids include reverse osmosis and polyphosphate feeders.

RO Water

This machine can be supplied with Reverse Osmosis water, but the water conductivity must be no less than 10 microSiemens/cm. A reverse osmosis system should include post treatment to satisfy the R.O. water's potential aggressiveness. Deionized water is not recommended.

Because water softeners exchange one mineral for another, softened water may not improve water conditions when used with ice machines. Where water is very hard, softened water could result in white, mushy cubes that stick together.

If in doubt about the water, contact a local point of use water specialist for recommendations on water treatment.

Installation Overview

The ice machine must:

- be connected to cold, potable water
- be connected to a drain
- be connected to the proper power supply
- be able circulate air through the vents at the front.

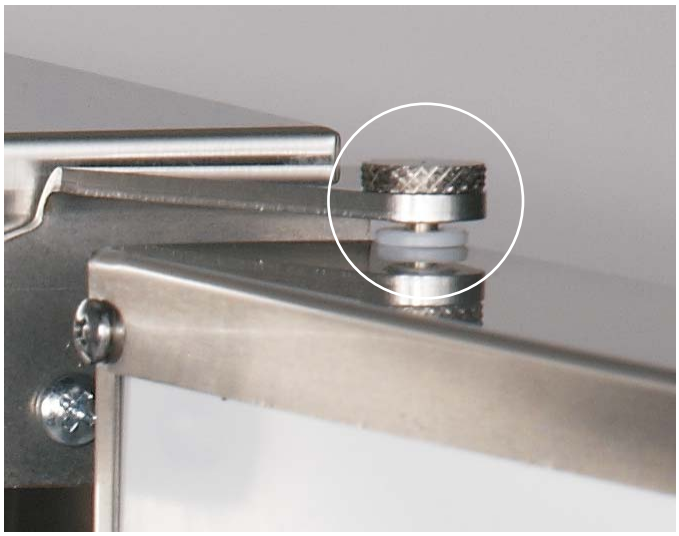
Note: Do not build in so that the door is recessed.

Door swing change

The door can be attached to open with hinges on the left or right.

To change:

1. Remove top hinge pin from hinge.



2. Tilt top of door away from cabinet and lift door off bottom hinge.

3. Remove two screws and top hinge.

4. Remove plugs or screws from lower cabinet bracket

5. Attach top hinge to lower cabinet bracket using original screws.

6. Remove original bottom hinge.

7. Remove two plugs or screws from upper cabinet bracket.

8. Attach bottom hinge to upper cabinet bracket using the original screws.

9. Place the door on bottom hinge, tip up to slide under top hinge.

10. Insert hinge pin into top hinge and door.

11. Tighten hinge pin.

12. Replace screws or plugs into holes left by hinges.

13. Check action and swing of door.

Notes for the Installer

Sealing to floor: In some cases the base of the ice machine must be sealed to the floor to meet local code. Food grade silastic sealant such as Scotsman part number 19-0529-01 is recommended.

Place the machine in the intended location. Turn the leg levelers in until the bottom of the unit is as close to the floor as possible. Be sure the unit is level and all four levelers are in contact with the floor.

Place a bead of the sealant between the floor and the outside edge of the cabinet. The bead must fill the space between the cabinet bottom edges and the floor.

Installations on a slab: Use a pump model and pump the water to the point of drainage. Pump models will pump 1 story (10 feet) high.

Installations over a crawl space or basement: Either gravity drain or pump model units may be used, if there is not enough room behind the machine for a drain/waste receptacle, the drain will have to be below the floor.

Note: When installed in a corner, the door swing may be limited due to handle contact with the wall or cabinet face.

Installation: Water & Drain

The recommended water supply tubing is ¼ inch OD copper. Install an easily accessible shut-off valve between the supply and the unit. This shut-off valve should not be installed behind the unit.

Note: Do not use self-piercing type valves.

1. Remove the front service panel.

2. Route the tubing through the right hole in the back to the inlet water solenoid valve inlet.

3. Install a compression fitting on the tubing and connect to the inlet of the solenoid.

Water Connection Point

Drains

There are two types of ice machine models, one that drains by gravity and one that has an internal drain pump.

Drain Pump Model drain installation

1. Locate the coil of 3/8” ID plastic drain tubing secured to the back of the unit.

2. Route the plastic drain tube from the back of the unit to the drain connection point.

The drain connection point can be as high as 10 feet above the ice machine. The drain pump includes a check valve to prevent re-pumping water in the drain hose.

IMPORTANT NOTE: Often an air gap is required by local codes between the ice maker drain tube and the drain receptacle.

Gravity Drain

Caution: Restrictions in the drain system to the machine will cause water to back up into the ice storage bin and melt the ice. Gravity drain tubing must be vented, have no kinks and slope to the building drain. Air gaps are typically required by local code.

1. Place the ice machine in front of the installation opening. Adjust leveling legs to the approximate height.

2. Remove the front service access panel and the upper back panel.

Note: If you are connecting a gravity drain model and the drain opening has been located in the floor under the base pan according to the pre install specifications, follow steps 3 through 5 to drain the unit through the base. If not, proceed to step 6b.

3. Remove the clamp and barbed elbow and take off the plastic cover in the base pan below the drain hose.

4. Connect a straight 5/8” barbed connector to the drain hose, securing with the clamp removed in step 3.

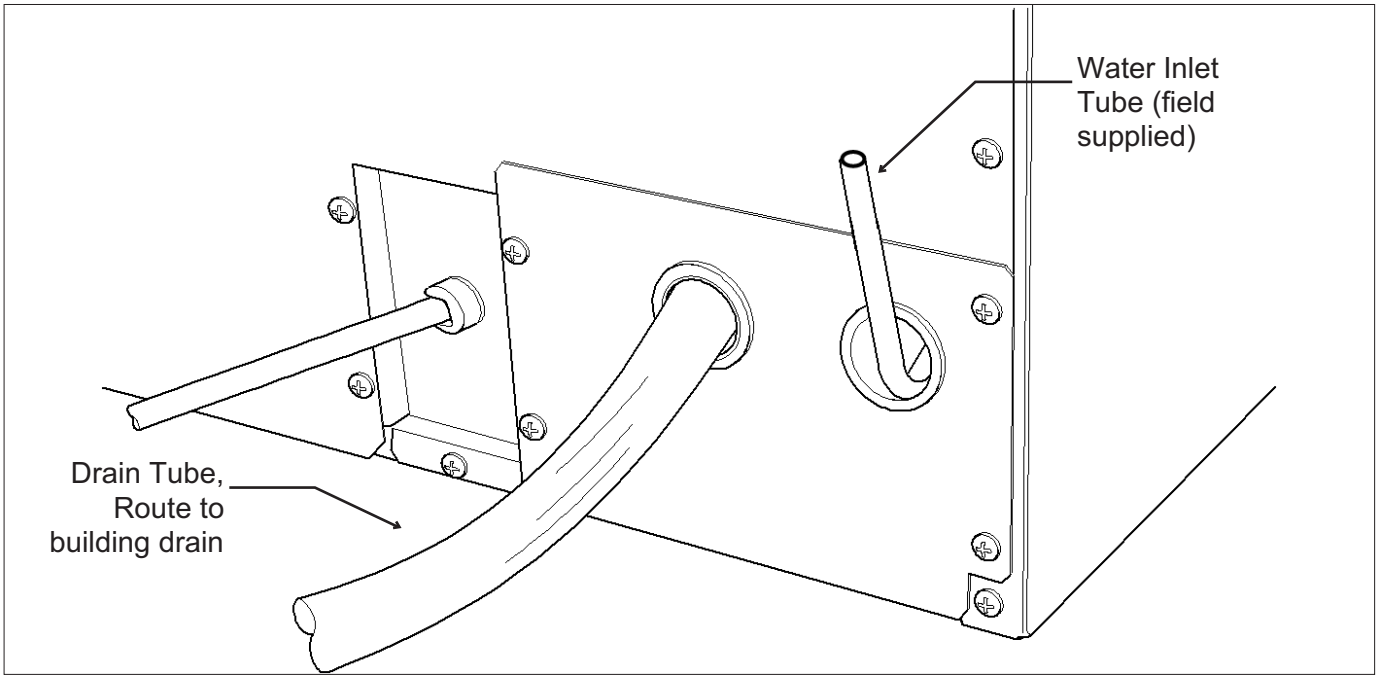
5. Cut an 8” piece of 5/8” ID X 7/8” OD tygon (clear plastic) tubing. Slide one end of the tube onto the outlet of the barbed connector and secure with a clamp. Leave the other end of the tube lying on the floor of the base pan until the unit is positioned over the floor drain.

6. Route the drain tube. Either a) Insert the drain tube through the base pan into the floor drain or b) Route the drain tube through the left hole in the lower back panel and connect to barbed elbow and secure with a clamp.

Note: Add a vertical vent in a horizontal drain tube to reduce internal pressure and improve drainage.

7. Reinstall the upper back panel.

8. Reinstall the service access panel. Level the unit.



Back View, Drain Pump Model

Electrical

The ice machine is supplied with a power cord. Do not remove the grounding pin from the cord's plug. Do not use extension cords. Follow all codes. Connect the machine to its own 115 volt, 15 amp circuit.

1. If the electrical outlet for the ice maker is behind the unit, plug in the unit.

2. Position the unit in the installation opening.

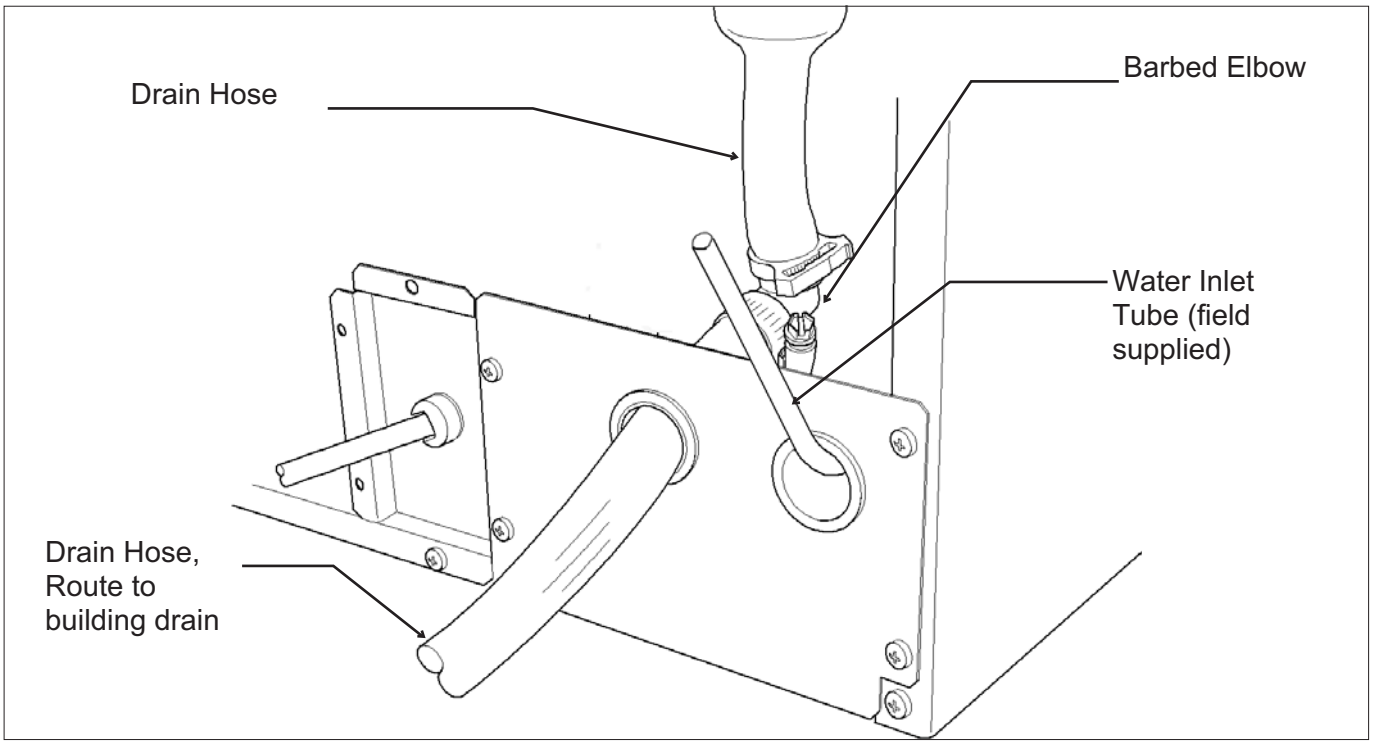
3. Turn on the water supply. Make sure that the ice maker is plugged in and the power is on.

4. Slide unit into installation opening, paying careful attention to water supply and drain connections. Do not kink!

5. Pour a couple of quarts of water into the ice storage bin; on drain pump equipped machines the drain pump should start and water should pump out. Check for leaks.

6. Replace the service access panel.

7. Level the unit as needed.



Back View, Gravity Drain Model

Start Up

Check list:

1. Has the unit been connected to the proper water supply?
2. Has the water supply been checked for leaks?
3. Has the unit been connected to a drain?
4. Has the drain been tested for flow and leaks?
5. Has the unit been connected to the proper electrical supply?
6. Has the unit been leveled?
7. Have all packing materials been removed from the machine?
8. Has the door covering been installed?

Initial Start Up

1. Turn on the water supply.
2. Switch on the electrical power.
3. Push and release the On/Off switch to start the machine. The Ice Making light next to the On/Off switch will glow Green.

4. Water will begin to flow into the unit. When the reservoir is full, water will start to drain from the machine. After a few minutes the compressor, water pump and fan motor will begin to operate and the first ice making cycle will have begun.

No adjustments are needed.

After about a half hour, ice will fall into the ice storage bin. The machine makes 24 cubes per batch. It is normal for the first batches of ice to melt, that continues until the bin has cooled. It will take 8 to 10 hours of continuous run time to fill the ice bin. When the bin is full of ice, the ice machine will shut off. It will automatically restart when the ice level falls, either from use or normal meltage.

Use

No special instructions are needed for use. Just take as much ice as you need, the machine will replace it. A scoop is provided, and it can be stored in the machine using the loop of tubing on the right side as a holder. That tubing is also the ice level sensor; ice will fill the storage bin until it's near to or on that tube and then the machine will shut off.

To maximize ice storage capacity, you may need to use the scoop to level the ice in the storage bin, especially within the first day or so of operation.

The machine can be shut off anytime by just pushing and releasing the On/Off button. The machine will shut off at the end of the next cycle. To shut off immediately, push and hold the On/Off button in until the machine stops.

What shouldn't be done?

Never keep anything in the ice storage bin that is not ice. Objects like wine or beer bottles are not only unsanitary, but the labels can slip off and plug up the drain.

Never allow the machine to operate without regular cleaning. The machine will last longer if it is kept clean. Regular cleaning should happen at least once per year, and preferably twice. Some water conditions will dictate even more frequent cleaning of the ice making section, and some carpets or pets will dictate more frequent cleaning of the condenser.

Note: The Time to Clean light will switch ON after 6 months of use. It will stay ON until the ice making system is cleaned using the process on page 13.

Noise:

The ice machine is designed for quiet operation, but will make some noise during the ice making cycle. During a freezing cycle, it is normal to hear the fan moving air and the water pump circulating water. Ice hitting the bin or ice in the bin can be heard during harvest.

Normal cubes are tapered cylinders. If the cubes are ragged and mis-shaped, mineral scale must be removed from the ice making system

Maintenance

There are 5 things to keep clean:

1. The outside cabinet & door.

2. The ice storage bin.

3. The condenser.

4. The ice making system.

5. The ice scoop.

How to clean the cabinet.

Wipe off any spills on the surface of the door and handle as they occur. If anything spilled on the door or gasket dries onto the surface, wash with soap and warm water to remove.

How to clean the ice storage bin.

The ice storage bin should be sanitized occasionally. It is usually convenient to sanitize the bin after the ice making system has been cleaned, and the storage bin is empty.

A sanitizing solution can be made of 1 ounce of household bleach and two gallons of hot (95^{o}F. – 115^{o}F.) water. Use a clean cloth and wipe the interior of the ice storage bin with the sanitizing solution, pour some of the solution down the drain.

Allow to air dry.

How to clean the condenser and winterize.

Condenser cleaning

The condenser is like the radiator on a car, it has fins and tubes that can become clogged with dirt and lint. To clean:

1. Remove the kickplate and front service panel.

Note: Outdoor operation can lead to rapid build up of debris, such as leaves and other vegetation. The condenser will need to be frequently checked for debris. Clean it whenever the fins are obstructed.

2. Locate the condenser surface.

3. Vacuum the surface, removing all dust and lint.

Caution: Do not dent the fins.

4. Return the kickplate and front service panel to their original positions. Fasten them to the cabinet using the original screws.

Winterizing

1. Clean the ice making system.

2. Open the door and push and release the On/Off switch to turn the machine off.

3. Turn off the water supply.

4. Drain the water reservoir by removing the rubber cap under the reservoir - it's near the back wall of the ice storage bin.

5. Disconnect the incoming water line at the inlet water valve.

6. Open the door, push and release the on/off switch to turn the machine on.

7. Blow air through the inlet water valve until water stops flowing out; a tire pump could do the job.

8. Drain pump models should have about 1/2 gallon of RV antifreeze (propylene glycol) poured into the ice storage bin drain.

Note: Automotive antifreeze must NOT be used.

9. Switch off and unplug the machine.

Clean and Sanitize Ice Making System

Remove Scale

1. Remove and discard all ice.

2. Press and HOLD the On/Off button in for 3 seconds until the Green light goes out.

3. Press and HOLD the both the Clean-Reset and On/Off buttons for 5 seconds. The Time to Clean light will blink on and off.

4. Pour 4 ounces of Scotsman Ice Machine Scale Remover (available from a local Scotsman Distributor or Dealer) into the ice machine reservoir.

5. Operate the machine for about ½ hour.

6. Push and release the On/Off switch. The machine will begin to flush out the cleaning solution.

7. Operate the machine for another ½ hour.

8. Push and release the On/Off switch. The machine will stop the cleaning process.

9. Pour a gallon of hot (95°F. – 115°F.) water into the bin to flush out the drain.

10. Clean the bin liner of mineral scale by mixing some ice machine scale remover and hot water, and using that solution to scrub the scale off of the liner.

11. Rinse the liner with hot water.

Sanitize the bin interior.

1. Mix a 1 gallon solution of locally approved sanitizer.

Note: A possible sanitizing solution may be made by mixing 1 ounce of liquid household bleach with 2 gallons of warm (95-115°F.) potable water.

2. Remove the top panel.

3. Pour 2 quarts of sanitizer solution onto the top of the ice making platen. Be sure all surfaces inside the platen are contacted by the sanitizer.

4. Return the top panel to its original position.

5. Remove the curtain, wash it with the sanitizing solution. Return the curtain to its original position.

6. Press and HOLD the both the Clean-Reset and On/Off buttons for 5 seconds. The Time to Clean light will blink on and off.

7. Thoroughly wash all surfaces of the reservoir, bin liner, scoop, scoop holder and door liner with the sanitizer solution. Pour excess solution into bin to sanitize the drain.

8. Wait 10 minutes, push and release the On/Off switch. The machine will begin to flush out the sanitizing solution.

9. Operate the machine for another ½ hour.

10. Push and release the On/Off switch. The machine will stop the cleaning process.

11. Push and release the On/Off switch again to restart ice making.

What to do before calling for service

Ice cubes are incompletely formed

- Clean the ice making system

Low capacity

- Check for restricted drain or standing water in the bin
- Clean the air cooled condenser fins

No ice

- Check on-off switch
- Check electrical breaker
- If the Check Water light is flashing Red, check water supply. The control system checks for water every 20 minutes. When the water supply is restored, the machine will automatically restart ice making.
- If outdoors and the air temperature is below 50 degrees F., the machine may not operate.

Time to Clean light is on

- Clean the ice making system.

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